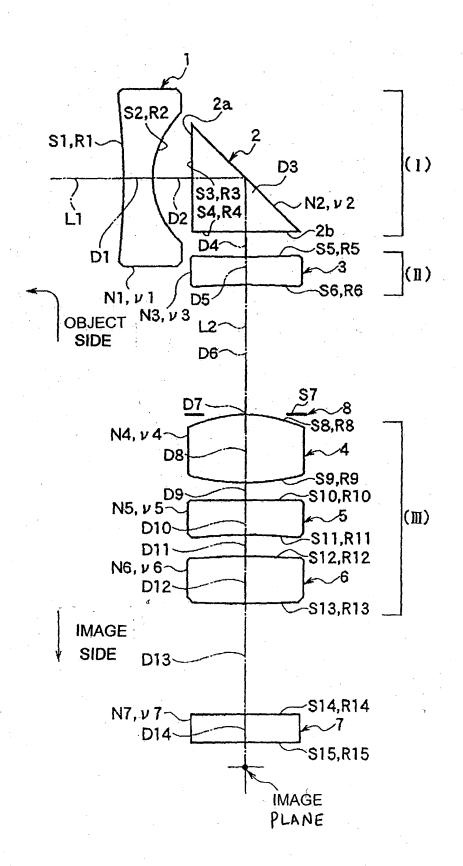
Docket No.: 9613/0M946US0

Sheet 1 of 21

FIG. 1



Docket No.: 9613/0M946US0

Sheet 2 of 21

FIG. 2A

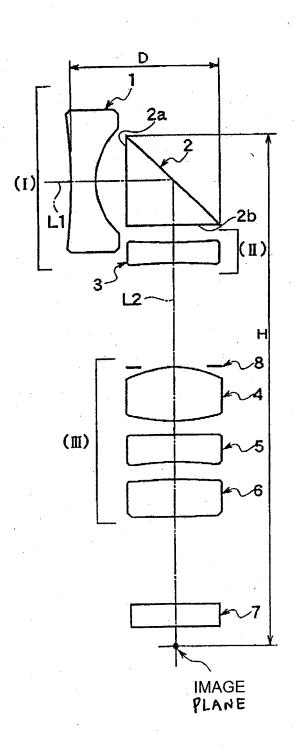
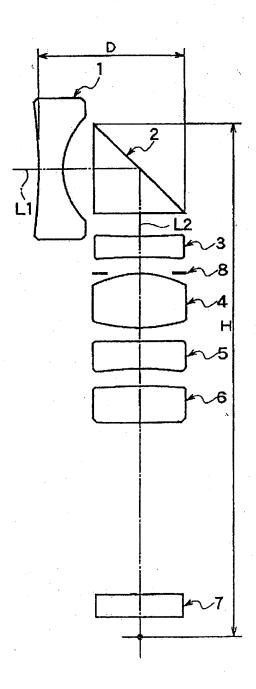


FIG. 2B



Inventor: Hotaka Takeuchi Title: ZOOM LENS Docket No.: 9613/0M946US0

Sheet 3 of 21

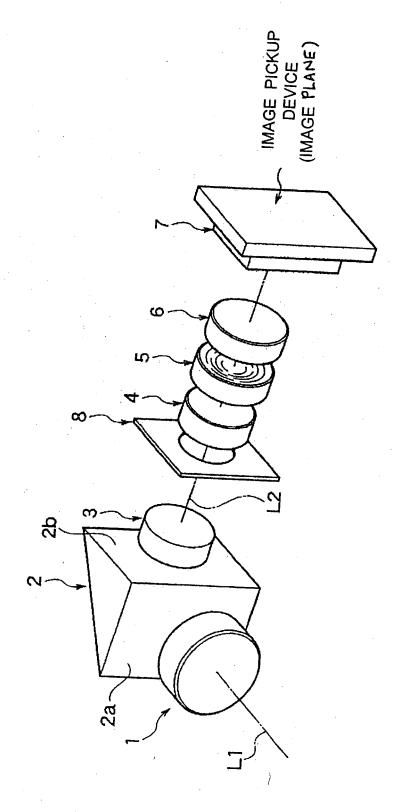


FIG. 3

LATERAL CHROMATIC **ABERRATION** DISTORTION (%) PLO **ASTIGMATISM** SPHERICAL ABERRATION SINE CONDITION (S.C.) 0.2 エ

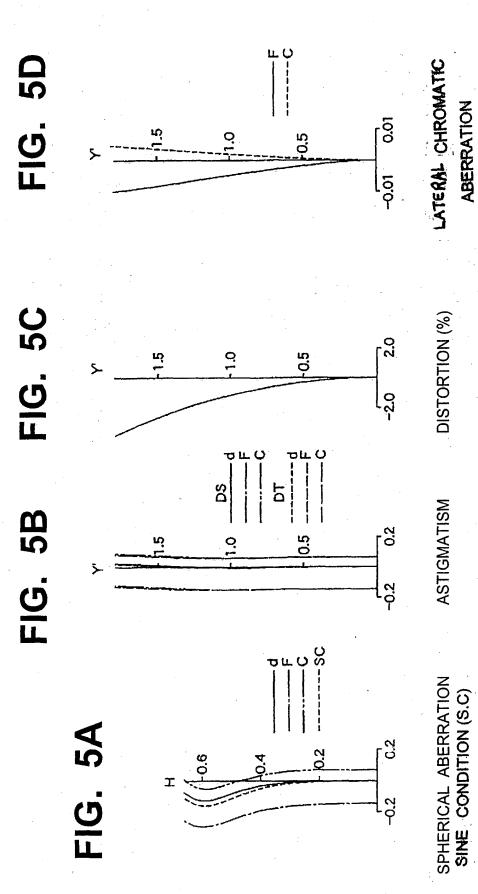
Docket No.: 9613/0M946US0

Sheet 4 of 21

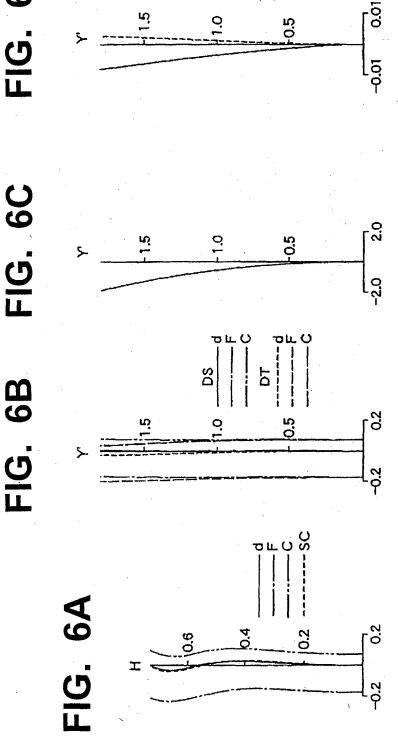
Docket No.: 9613/0M946US0

ABERRATION

Sheet 5 of 21



Docket No.: 9613/0M946US0 App No.: Not Yet Assigned Inventor: Hotaka Takeuchi Title: ZOOM LENS Sheet 6 of 21 0.0 0. -0.0



ASTIGMATISM SPHERICAL ABERRATION SINE CONDITION (S.C)

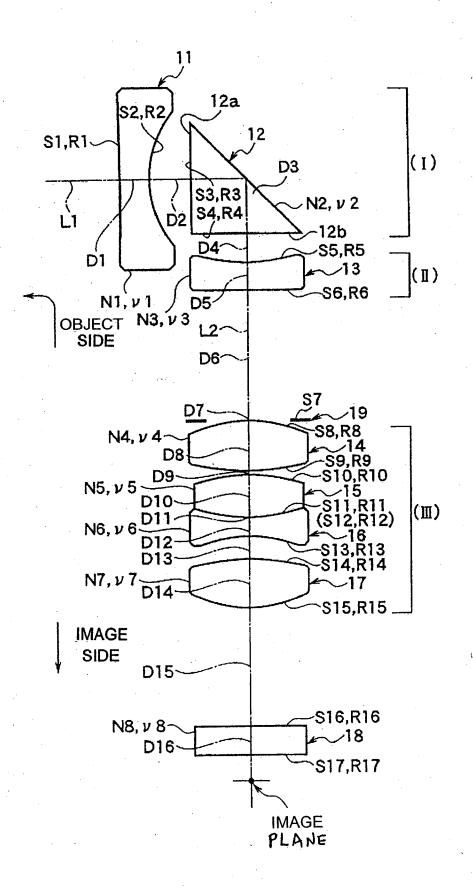
LATERAL CHROMATIC ABERRATION

DISTORTION (%)

Docket No.: 9613/0M946US0

Sheet 7 of 21

FIG. 7



App No.: Not Yet Assigned Inventor: Hotaka Takeuchi

Title: ZOOM LENS

Docket No.: 9613/0M946US0

Sheet 8 of 21

FIG. 8A

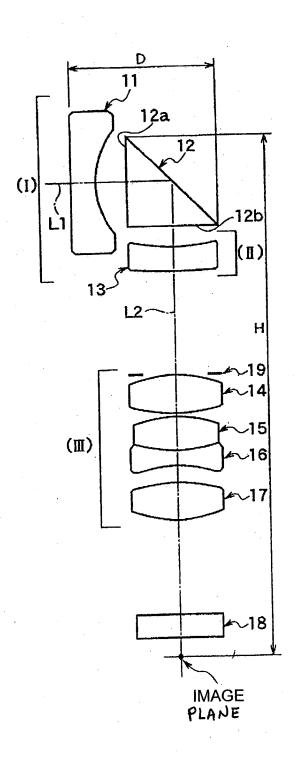
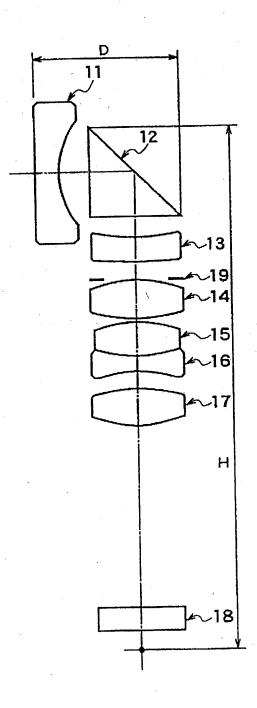


FIG. 8B

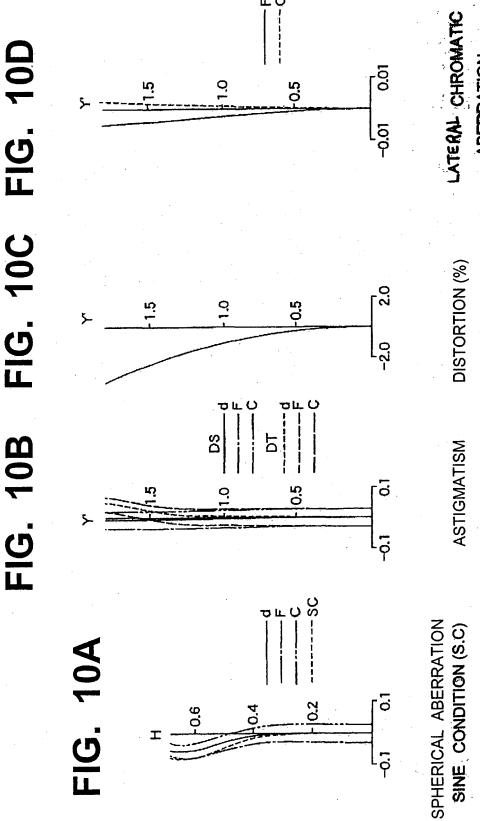


Docket No.: 9613/0M946US0 App No.: Not Yet Assigned Inventor: Hotaka Takeuchi Title: ZOOM LENS Sheet 9 of 21 LATERAL CHROMATIC ΨÇ ABERRATION 9 **DISTORTION** (%) ا ئ 0.5 **т** (L () **ASTIGMATISM** FIG. 9B 0 SPHERICAL ABERRATION SINE CONDITION (S.C) 0 0.2

FIG. 9A

Docket No.: 9613/0M946US0

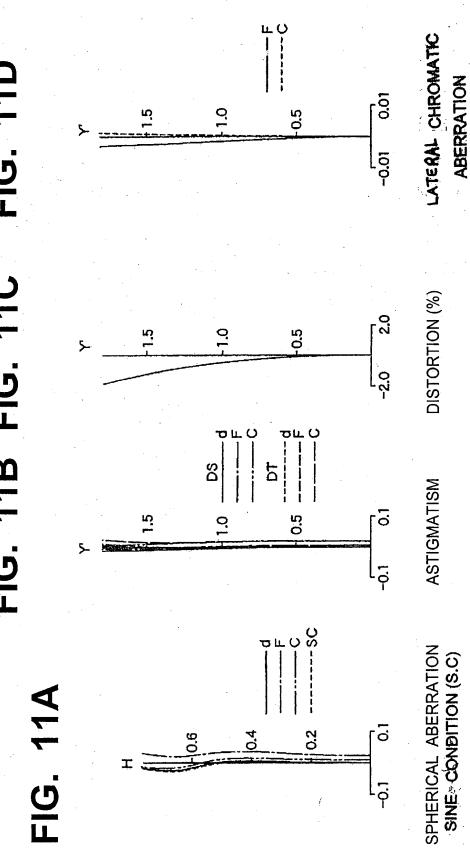
Sheet 10 of 21



Docket No.: 9613/0M946US0

Sheet 11 of 21

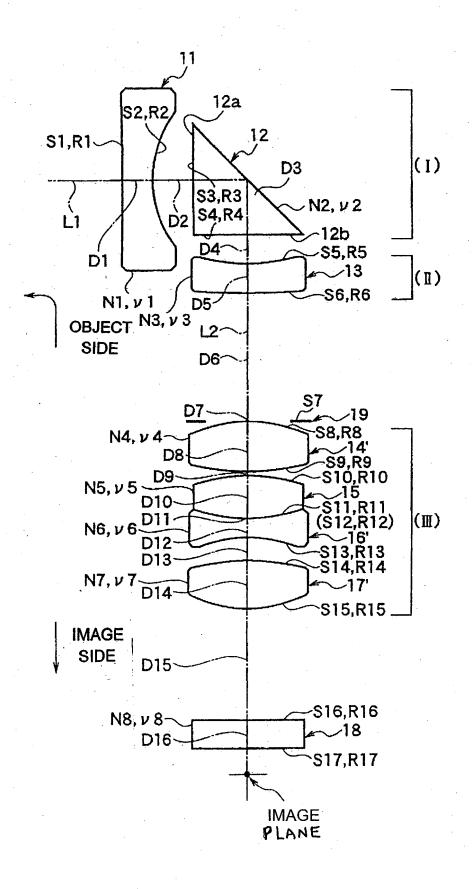
FIG. 11B FIG. 11C



Docket No.: 9613/0M946US0

Sheet 12 of 21

FIG. 12



Docket No.: 9613/0M946US0

Sheet 13 of 21

FIG. 13 A

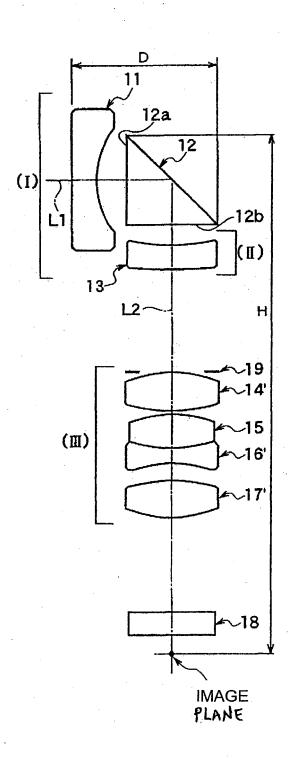
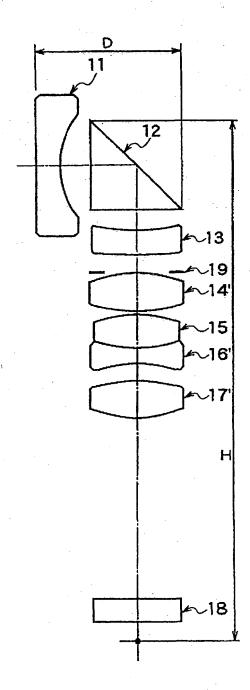
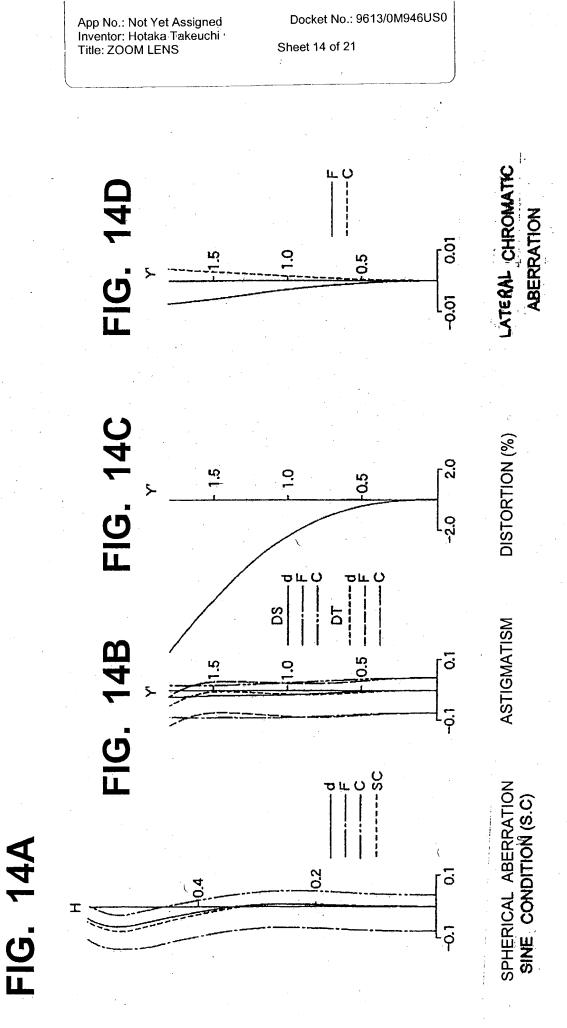


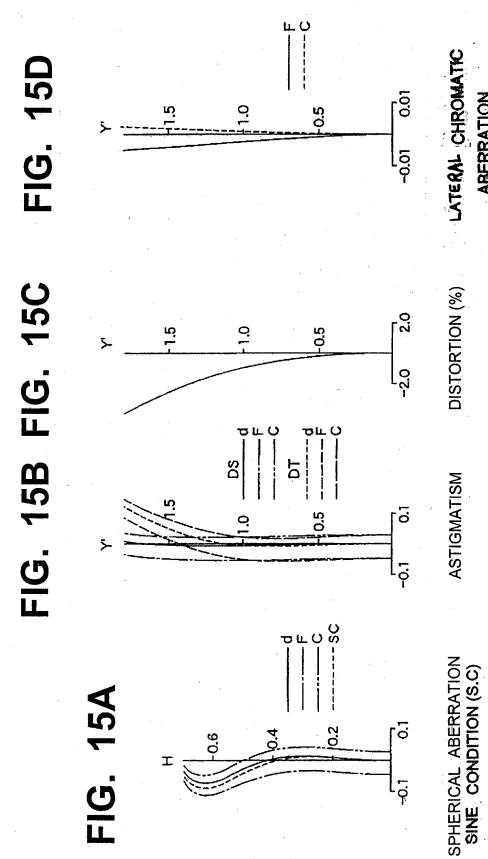
FIG. 13 B





Docket No.: 9613/0M946US0

Sheet 15 of 21



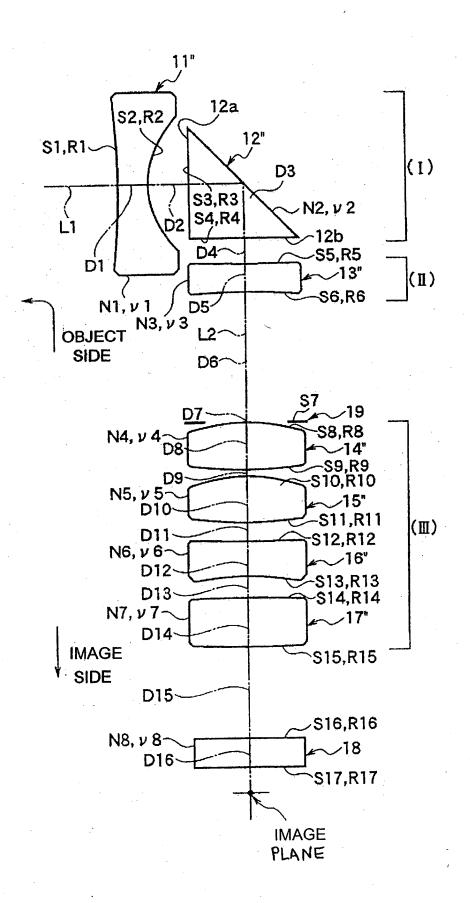
LATERAL CHROMATIC ABERRATION

App No.: Not Yet Assigned Inventor: Hotaka Takeuchi Title: ZOOM LENS Docket No.: 9613/0M946US0 Sheet 16 of 21 LATERAL CHROMATIC ABERRATION 0.01 0 0.5 [0,0 FIG. 16C DISTORTION (%) 5.0 0.5 -2.0 FIG. 16B **ASTIGMATISM** 0. SPHERICAL ABERRATION SINE CONDITION (S.C.) FIG. 16A ٠<u>-</u> 0.2

Docket No.: 9613/0M946US0

Sheet 17 of 21

FIG. 17



Docket No.: 9613/0M946US0

Sheet 18 of 21

FIG. 18A

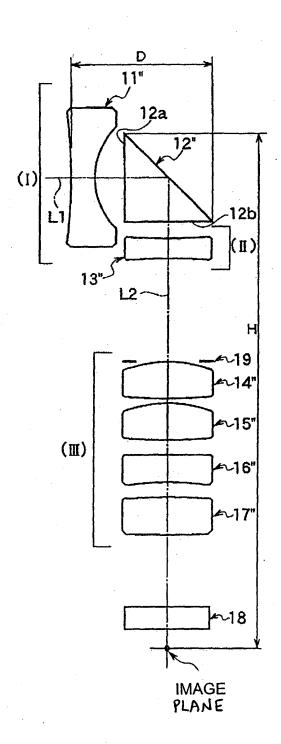
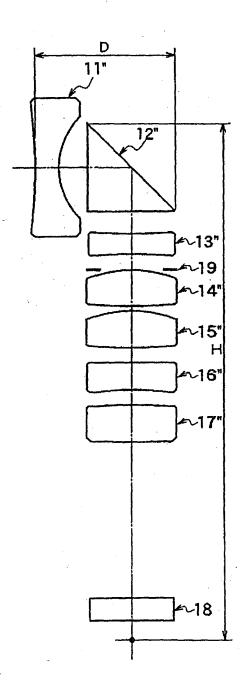
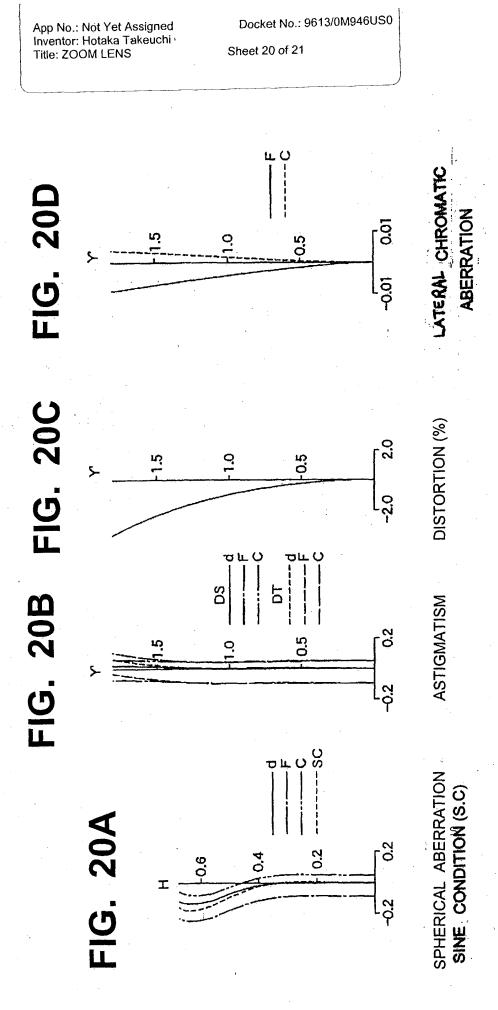


FIG. 18B



App No.: Not Yet Assigned Inventor: Hotaka Takeuchin Title: ZOOM LENS Docket No.: 9613/0M946US0 Sheet 19 of 21 LATERAL CHROMATIC FIG. 19D ABERRATION 0.01 FIG. 19C **DISTORTION** (%) 0 πŝ は下の FIG. 19B **ASTIGMATISM** ري 1 ρ Γ O OSPHERICAL ABERRATION SINE CONDITION (S.C) 0.2 T



Docket No.: 9613/0M946US0

Sheet 21 of 21

